

*Biographical notices of mineralogists recently deceased;
with an index to those previously published in this
magazine.*

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IN this series of notices the idea has been to collect the more salient facts for purposes of reference. Notices on much the same lines will be found scattered through the eighteen preceding volumes (1876-1919) of this Magazine, but it is thought that at the present time they may be of more general utility if collected together under a definite heading. This is especially the case after the general disorganization of the scientific world caused by the Great War, during which many of the promising younger workers have unfortunately been eliminated. It is, however, still difficult to obtain full information, and much of the scattered literature is still inaccessible. For kind assistance in Russian, Bohemian, Hungarian, and Japanese matters I am indebted to P. N. Chirvinsky, F. Slavik, K. Zimányi, and R. Ōhashi respectively. In the general index (of 275 entries) it has been found possible to add a few additional dates of birth and death.

ADYE (Ernest Howard) [March 10, 1857-June 15, 1918] published in serial parts the following well-illustrated works on petrography: 'The twentieth century atlas of microscopical petrography' (London, 1904-6); 'Studies in micropetrography' (vol. 1, parts 1-4, 1906-7); 'Modern lithology' (1907). While these were still incomplete, he went to India in connexion with work on economic geology, and for a time he was Director of the Geological Survey of Porbandar State. He was elected a Fellow of the Geological Society in 1916.

ANDRÉE (Adolf) [-1917], an apothecary at Hanover, died there on February 25, 1917, in his seventy-sixth year. He had charge for many years of the mineral collection in the provincial museum of Hanover, and was a member of the German Mineralogical Society. His published works related to botany.

ARMASHEVSKY (Petr Jakovlevich), Армашевский (Петръ Яковлевичъ) [-1919], Professor of Mineralogy and Geology in the University of Kiev, was shot by the Bolsheviks in the summer of 1919. His papers, mainly geological, date from 1874, but he also wrote on crystalline rocks and determined the crystallographic constants of some organic compounds.

BAILEY (Tom Esmond Geoffrey) [1883-1919] was born on April 15, 1883, and educated at Kendal, Dulwich, and Cambridge (B.A. 1905). In 1906-8 with Dr. A. R. Andrew he made a mineral survey of Nyasaland (Colonial Office Rep., misc. ser., 1908, no. 48; 1909, no. 60. 'The geology of Nyasaland,' Quart. Journ. Geol. Soc., 1910, vol. 66, pp. 189-252). In 1909 he went as an oil geologist to Burma and Borneo. In the war he served with distinction as a captain on the Western Front (1915-8), and unfortunately was killed at the very end in northern Russia on April 2, 1919. (Quart. Journ. Geol. Soc., 1920, vol. 76, p. xlviii.)

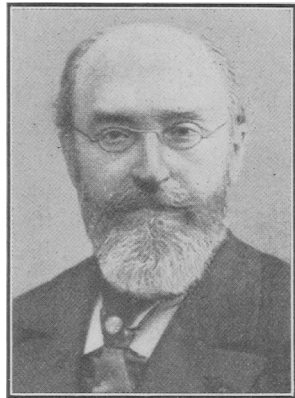
BARNETT (Andrew Ketchan) [1852-1914] was born at Chacewater in Cornwall early in 1852 and died on April 29, 1914. He was an original (1876) member of this Society, and was elected a Fellow of the Geological Society in 1875. He was connected with Cornish mining, and collected and sold Cornish minerals. His classes on mineralogy in 1873 led to the foundation of the Mining and Science School at Penzance, of which he was principal; and he was seven times (1906-1912) Mayor of Penzance. In 1906 he was awarded the Bolitho gold medal by the Royal Geological Society of Cornwall, and in 1907 and 1908 he was President of that Society. His few published papers deal with Cornish mines and elvans.

BECK (Carl Richard) [1858-1919], since 1895 Professor of Geology and the study of mineral-deposits (Lagerstättenlehre) at the Mining Academy of Freiberg, was born on November 24, 1858, at Niederpaffenstiel in the Erzgebirge, where his great-grandfather, grandfather, and father were successively managers of the smalt works. He died on August 18, 1919. After studying under H. Credner and

F. Zirkel at Leipzig, he became in 1883 geologist on the Geological Survey of Saxony, and wrote fifteen of the district memoirs. His favourite study was that of fossil plants, and his first (1882) and last (1919) papers were on this subject. Curiously, when appointed successor to A. W. Stelzner at Freiberg in 1895, he had no special knowledge of ore-deposits; but he soon commenced to pour out papers on this subject, and his 'Lehre von den Erzlagerstätten' (1900-1; 3rd edit., 2 vols., 1909) is a standard work, which has been translated into English (in America) and French. He also wrote many papers on petrography, and applied with success the methods of petrography to the study of ore-deposits. On the occasion of the 150th anniversary of the Freiberg Mining Academy, celebrated in July, 1916, the new buildings of the Mineralogical and Geological Institute were opened, and Richard Beck was made 'Geheimer Bergrat'. He was an honorary doctor of Geneva, Leoben, and Toronto, and honorary member of the American Institute of Mining Engineers, the Geological Society of South Africa, &c. (O. Stutzer, 'Richard Beck †.' Zeits. prakt. Geol., 1919, Jahrg. 27, pp. 149-153, with portrait and bibliography.)

BOEKE (Hendrik Enno) [1881-1918], was born in Holland on September 12, 1881. Studying chemistry at the University of Amsterdam he took his degree of doctor in 1905 with a dissertation on mixed crystals of sulphate, molybdate, and tungstate of sodium. He then migrated to Germany, working with G. Tammann at Göttingen and with F. Rinne at Hanover and Königsberg. In 1908 he was appointed Professor of Physico-Chemical Mineralogy and Petrography (the first post of its kind) at Leipzig, passing to Halle in 1911 and Frankfurt-am-Main in 1914 as Professor of Mineralogy and Petrography. During the period 1906-17 he published fifty-three papers, most of them dealing with mineralogical problems from a physico-chemical standpoint, e. g. (following the work of J. H. van't Hoff) crystallization schemes bearing on the potash-salt deposits. His latest papers dealt with geometrical methods of plotting the chemical composition of complex mineral silicates [Min. Abstr., p. 246. In 1911 and 1913 he published brochures on the stereographic and gnomonic projections, and in 1915 his 'Grundlagen der physikalisch-chemischen Petrographie.' He died in his laboratory at Frankfurt on December 6, 1918. (F. Rinne, 'Hendrik Enno Boeke * 12. September 1881, † 6. Dezember 1918.' Centralblatt Min., 1919, pp. 90-96, with bibliography.)

CARNOT (Marie Adolphe) [1839–1920], Director of the École Nationale Supérieure des Mines, Inspecteur général des Mines, and Membre de l'Institut, was born at Paris on January 27, 1839, and died there on June 20, 1920. He belonged to a distinguished family: his grandfather, Lazare N. M. Carnot (1753–1823), was a French General; his father, L. Hippolyte Carnot (1801–88), a statesman; his uncle, Sadi N. L. Carnot (1796–1832), a celebrated physicist; and his elder brother, M. F. Sadi Carnot (1837–94), President of the French Republic. Adolphe Carnot entered the École Polytechnique in 1858, and became Ingénieur des Mines in 1864. As a result of his travels in Germany and Austria with A. de Lapparent he gave an account of the metallurgical treatment of the Freiberg ores (*Annales des Mines*, 1864). In 1868 he was Professor of general chemistry, and since 1877 of analytical chemistry in the School of Mines at Paris, becoming Director in 1901, and since his retirement in 1907 Honorary Director. He was also (1876–1901) Professor of Mineralogy and Geology in the Institut National agronomique. Later, he was President of the Société du Gaz de Paris. In his extensive work in analytical chemistry he dealt with minerals, rocks, ores, mineral waters, soils, and crystallized furnace products. His earlier papers in 1873 were on the discovery at Meymac, France, of an occurrence of bismuth and tungsten minerals. His exhaustive 'Traité d'analyse des substances minérales' was commenced in 1898, vol. 3 appeared in 1906, and the last volume was in the press at the time of his death. Minerals described by him as new were coolgardite, luckite, mallardite, and maymacite. The much-sought uranium and vanadium mineral, carnotite, was named after him in 1899; the same name, or silico-carnotite, was also later applied to blue crystals of calcium silico-phosphate from basic slags analysed by Carnot in 1883. (Henry Sagnier, 'Notice biographique sur Adolphe Carnot, ancien membre de l'Académie.' *Travaux et Notices, Acad. Agricult. France*, 1921, vol. 2, reprint 23 pp. with portrait. Also a privately-printed brochure 'Adolphe Carnot, 1839–1920' (36 pp., with portrait) containing a collection of obsequial discourses.)



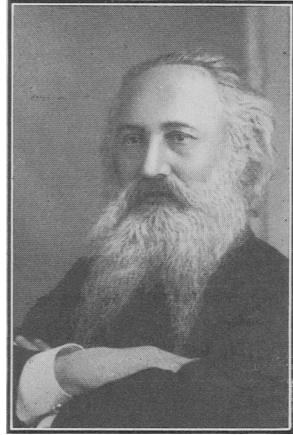
ADOLPHE CARNOT.

COSTA SENA (Joaquim Candido da) [1852-1919], Professor and Director of the Escola de Minas at Ouro Preto, Brazil, was born at Conceição in Minas Geraes, and died on June 20, 1919. He joined the French Mineralogical Society in 1884, and in its Bulletin described various minerals from the neighbourhood of Ouro Preto. Senaite was named after him by E. Hussak and G. T. Prior (this Magazine, 1898, vol. 12, p. 32).

Doss (Karl Bruuo) [1861-1919] was born at Auerbach in Saxon Vogtland on November 1, 1861, studied in Munich (under Groth) and Leipzig (under Zirkel), taking his degree in 1886 with a dissertation on the basaltic rocks of Syria. In 1889 he became Professor of Mineralogy and Geology in the Polytechnic at Riga. On the outbreak of war he was interned in Russia, but in 1915 was returned to Germany by way of Rumania. In 1917 while acting as war geologist on the Eastern Front his health broke, and he died at Dresden on May 28, 1919, after a long illness. He was a voluminous writer on a variety of geological and mineralogical matters, many of his papers being written in Russian; and for many years he supplied abstracts of Russian papers to the *Neues Jahrbuch f. Mineralogie*. (R. Beck, 'Zur Erinnerung an Bruno Doss.' *Centralblatt Min.*, 1919, pp. 257-268, with portrait and bibliography.)

ФЕДОРОВ (Евграф Степанович), Федоровъ (Евграфъ Степановичъ) [1853-1919], the celebrated Russian crystallographer, was born at Orenburg on December 10, 1853, and died of privation in Petrograd on May 28, 1919. In the German translations of his papers his name appeared as E. von Fedorow. The son of a Russian General, he entered the army and in 1872 was an officer in the engineers; but he later resigned his commission to enter as a student at the Institute of Mines at Petrograd, graduating from there as 'Engineer of Mines' in 1883. In the same year he was appointed a geologist in the Mines Department, and in 1885 Curator of the collections of the Russian Geological Survey. In 1894 he was Director of the Geological Museum of the Turinsky mines in Perm, in 1895 Professor of Mineralogy and Geology in the Agricultural School near Moscow, and lastly, from 1905, Professor of Crystallography and Mineralogy in the Institute of Mines at Petrograd, of which for a time he was also Director. His numerous papers are marked with a high degree of originality, but are, unfortunately, difficult to follow even when written in his native language. Much of his early work—as, for example, the first deduc-

tion (in the year 1890) of the 230 point-systems possible for crystal-structures—was published in Russian, and almost inevitably remained unknown to other workers, who not infrequently arrived at similar conclusions; the result being numerous claims for priority in Fedorov's later papers), e.g. *Min. Mag.*, vol. 18, p. 99). His earliest papers, most of them on the geometry of crystals, were published only in abstract (*Protokolui* for 1881–4 of the Russian Mineralogical Society). His first complete paper, 'Elements of the theory of figures', appeared in 1885, and occupied a whole volume of the *Journal* of that Society. In another direction he devised ingenious instruments and appliances for the study of crystals; such as his two-circle 'theodolite' goniometer (a brief description of which was given in 1889, but the full account with diagrams not until 1893), and his 'universal' microscope-stage for the optical investigation of small crystals, especially of rock-forming minerals in thin sections. He also published many papers and monographs on the petrology and geology of various mining districts, as well as treatises on geometry, crystallography (1891; 3rd edit., 1901), and petrography. Most of his later papers appeared in the *Zapiski* (*Annales*) of the Institute of Mines, a journal founded by him in 1907, and not readily accessible. In his descriptions of 'new minerals' he was rather unfortunate. The crowning achievement, however, was his system of 'crystallochemical analysis' in



E. S. FEDOROV.

which by means of a specially devised notation and classification he was able to tabulate systematically the enormous and tangled mass of published crystallographic data relating to some 10,000 substances. It thus became possible from the crystal measurements alone to identify quickly and surely any chemical compound for which measurements had been previously recorded. This great work, 'Das Kristallreich', was printed in 1913 for the *Memoirs of the Academy of Sciences of Petrograd* but never published, though fortunately at least one set of the proof-sheets has been preserved. Fedorov was elected an Honorary Member of this Society in 1902 and again in 1910. (H. B[acklund], '† E. S. Fedorov.' *Geol. För. Förh.* Stockholm, 1920, vol. 42, pp. 214–219.)

FLETCHER (*Sir Lazarus*) [1854–1921]. See notice by Sir H. A. Miers, this vol., pp. 181–192, plate V; also G. T. Prior, *Geol. Mag.*, 1921, vol. 58, pp. 141–143; W. J. L[ewis], *Journ. Chem. Soc. Trans.*, 1921, vol. 119, pp. 547–551; A. L[iversidge], *Proc. Roy. Soc.*, 1921, ser. A, vol. 99, pp. ix–xii, with portrait; C. L. Barnes, *Manchester Grammar School Magazine*, 1921, with portrait; *Nature*, London, 1921, vol. 106, pp. 636–637.

FRANZENAU (*Ágoston = August*) [1856–1919], senior assistant in the mineralogical and palaeontological division of the Hungarian National Museum at Budapest, was born at Kolozsvár in Transylvania on September 2, 1856, and died on November 19, 1919. After graduating at the University, he became in 1877 assistant in mineralogy and geology in the Polytechnic at Budapest, and entered the Museum in 1883. Between 1879 and 1915 he published several papers on the crystallography of Hungarian minerals, and also several palaeontological papers dealing principally with foraminifera.

FUGGER (*Friedrich Eberhard*) [1842–1919], Professor in the High School and Curator of the Botanic Garden and of the Museum at Salzburg, was born there on January 3, 1842, and died on August 21, 1919. He wrote on local mineralogy, geology, and botany, and in 1878 published '*Die Mineralien des Herzogthumes Salzburg*'. The mineral fuggelite was named after him.

GAUTIER (*Émile Justin Armand*) [1837–1920], French Chemist, was born on September 23, 1837, at Narbonne (Aude), and died on July 27, 1920, at Cannes. Since 1869 he was Professor of Chemistry in the medical faculty of the University of Paris, and he was a member of the Academy of Sciences. Armand Gautier's numerous papers were mostly on organic and physiological chemistry, but in 1893 he worked on phosphate deposits in French caves, naming the new species *minervite*, and in 1905–9 on the composition of volcanic gases.

GOLDSCHLAG (*Maurycy = Mauritz*) [1891–1917] was born at Stanislau in Poland on January 17, 1891, and died at Vienna on September 20, 1917. He graduated at Jena, and in 1914 worked at Lemberg on Carpathian petrography, and since 1915 at Vienna on the optical characters of the felspars and epidotes. He was also a contributor to C. Doelter's '*Handbuch der Mineralchemie*'.

GROSSPIETSCH (Oskar) [1873-1920], Privat-Dozent for Mineralogy in the Deutsche Technische Hochschule at Prague, died at Elbogen on June 26, 1920, aged 47. He was formerly at the Mining School at Leoben in Styria. His first paper, in 1908, on the crystallographic and optical characters of albite, was followed by others on labradorite and andesine. He devised an instrument used in conjunction with a two-circle goniometer for the preparation of orientated sections of crystals. In one of his papers on the minerals of the Styrian magnesite deposits he described in 1911 eichbergite as a new species.

HELLAND (Amund Theodor) [1846-1918], since 1885 Professor of Mining and Geology in the University of Christiania, was born at Bergen on October 11, 1846. His earliest papers (1870-3) were mineralogical (analysis of ytrotitanite, description of pseudomorphs, &c.). For many years he was a joint editor of the *Archiv for Mathematik og Naturvidenskab*. The mineral hellandite, described by W. C. Brögger in 1903, was named after him.

IDDINGS (Joseph Paxson) [1857-1920], the well-known American petrologist, was born at Baltimore on January 21, 1857, and died on September 8, 1920. He graduated in engineering at the Sheffield Scientific School of Yale University in 1877, and was there, in 1877-8, instructor in mechanical drawing and surveying. As a graduate student he took up chemistry and mineralogy, and later at the Columbia School of Mines also geology and assaying. In 1879-80 he studied microscopic petrography under Rosenbusch at Heidelberg. He then joined the staff of the United States Geological Survey (1880-92, and again in 1895). In 1892 he was appointed associate Professor of Petrology in the University of Chicago, where he acted as full professor from 1895 to 1908. He was also honorary curator of petrology in the United States National Museum. After his retirement he still worked assiduously at the petrology of igneous rocks, and he travelled extensively, visiting the principal volcanic districts of the world. He was closely connected with the development of microscopic petrography, and was one of the group of originators of the American system for the quantitative classification of igneous rocks (1903). In 1888 he published a translation of H. Rosenbusch's 'Microscopical physiography of rock-making minerals' (4th edit., 1898), and in 1906 his own work on similar lines 'Rock minerals' (2nd edit., 1911). His standard work 'Igneous rocks' was

published in two volumes in 1909 and 1913, and his 'Problems of vulcanism' in 1914. Amongst his several papers in scientific journals and official reports, special mention may be made of the Survey Monographs on the Eureka district in Nevada (1892) and the Yellowstone National Park (1899). As a rock-forming mineral to commemorate his name 'iddingsite' scarcely does him justice. (G. P. Merrill, Amer. Journ. Sci., 1920, vol. 50, p. 316.)

INOSTRANTZEV (Aleksandr Aleksandrovich), Иностранцевъ (Александръ Александровичъ) [1843-1920], since 1880 Professor of Geology in the University of Petrograd, was born at Petrograd on July 25, 1843. In 1868 he was curator of the mineral collection of the University. His first paper, in 1869, was on the Brahin meteorite, and he also wrote on schungite, platinum in peridotite, native iron, and variolite. A paper in 1885 dealt with the microscopical examination of opaque minerals.

ISTRATI (Constantin I.) [1850-1918], Professor of Organic Chemistry and Dean of the Faculty of Sciences in the University of Bucharest, was born at Roman in Rumania on September 5, 1850, and died at Paris on January 30, 1918. He graduated as M.D. at Bucharest in 1877 and D. ès Sc. at Paris in 1885. He was a Member of the Rumanian Academy and also entered into political life, being Minister of Public Works in 1899 and Minister of Education in 1900. His work on organic chemistry included certain native organic compounds, particularly those found in Rumania, and he wrote several papers on rumanite and ozocerite (including a new variety which he named moldovite). With M. A. Mihailescu he described albanite, and he published many analyses of marine salts from various localities. With G. G. Longinescu he published an elementary text-book 'Curs metodic de chimie și mineralogie pentru licee și școli speciale', which was translated into French (two editions) and reached a seventh Rumanian edition in 1920. In this last edition is given a short notice of his life, with a portrait.

JOHN *Edler von Johnesberg* (Conrad Heimich) [1852-1918], Chief Chemist of the Austrian Geological Survey, was born at Kronstadt in Transylvania on February 3, 1852, and died at Vienna in the night of June 27-28, 1918. C. v. John studied chemistry at the Technical High School at Vienna, and in 1874 entered as an assistant the chemical laboratory of the Geological Survey, following C. v. Hauer

as chief in 1881, and retiring on account of ill-health in 1911. Between 1874 and 1910 he published many analyses of minerals and rocks, besides numerous technical analyses in connexion with the work of the survey. He was also the author of several petrographical papers. (O. Hackl, 'Zur Erinnerung an Conrad v. John.' Verh. Geol. Reichsanstalt, Wien, 1918, pp. 179-184, with bibliography.)

JULIEN (Alexis Anastay) [1840-1919] was born at New York on February 13, 1840, and graduated A.B. at Union College in 1859. He died on May 7, 1919. After spending a few years (1860-4) as resident chemist on the guano island of Sombrero in the West Indies, he was for a long period at the School of Mines of Columbia University, New York, acting as assistant in analytical chemistry (1864-85), instructor in microbiology (1885-97), and lastly as curator of geology (1897-1909). He was also connected with the Geological Surveys of Michigan, Wisconsin, and North Carolina. Amongst the guano minerals he discovered the species metabrushite (ornithite and zeugite). He studied the alteration products of spodumene, one form of which he described under the name aglaite; and made a comparative study of iron-pyrites and marcasite. He also wrote on petrography and building stones.

KINCH (Edward) [August 19, 1848-August 6, 1920], Professor of Chemistry in the Royal Agricultural College at Cirencester (1881-1915), was an original member of this Society. He received his training in chemistry at the old Royal College of Chemistry in London, and for a time (1869-73) acted as Sir Arthur Church's assistant at Cirencester, from whom, no doubt, he acquired his taste for minerals. Later, he was a chemical assistant at the Royal School of Mines in London, Superintendent of Minerals in the India Museum in London (1875-6), and Professor of Chemistry in the Imperial College of Agriculture of Tokyo (1876-81). His work was mainly on agricultural chemistry, but he was the author of three chemical papers on dufrenite and plattnerite in this Magazine.

KLVAŇA (Josef) [1857-1919], Director of the High School at Gaya, Moravia, was born at Vienna on January 22, 1857. He was a pupil of E. Bořický at Prague, and from 1879 to 1882 was an assistant in the mineral collection of the Bohemian Museum. After the death of Bořický in 1881 he continued the work that had been commenced on

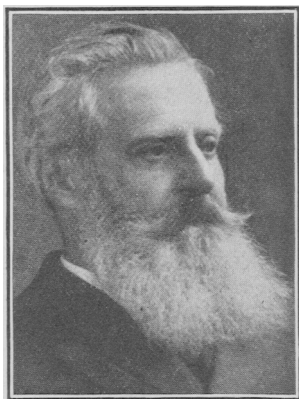
the petrography of Bohemia. In 1881 he described paracoquimbite as a new mineral (which has remained overlooked in the literature) together with other secondary sulphates occurring on phyllite at Troja near Prague. He wrote in Czech two books on topographical mineralogy—Moravia with Austrian Silesia in 1882, and Bohemia in 1900.

KRENNER (József Sándor = Joseph Alexander) [1839–1920], Director of the Mineralogical and Palaeontological Division of the Hungarian National Museum, was born at Budapest on March 2, 1839, and died on January 16, 1920. He graduated at Tübingen in 1865. Entering the museum in 1870, he was at the same time Professor of Mineralogy and Geology in the Polytechnic, and later Professor of Mineralogy in the University of Budapest. He was one of the select few members of the Hungarian Academy of Sciences. His many mineralogical papers (written in Hungarian, but usually translated into German) dealt mainly with the crystallography of Hungarian minerals. Early papers were on the crystallography of stibnite and on artificial double sulphates and selenates. Of the several minerals described by him as new, andorite, semseyite, and lorandite have stood the test of later investigations. Krennerite, the rare telluride of gold and silver, bears his name.

LACHMANN (Richard) [1885–1916], Privat-Dozent and Assistant in the Geological Institute of the University at Breslau, was born at Hamburg on February 23, 1885, graduated at Berlin in 1907, and fell in battle in the Carpathians on September 7, 1916. He wrote on the geology of salt-deposits and the plastic deformation of salt crystals, his last posthumous paper being 'Über Carnallitisierung der Südhartz-Kalilager', *Neues Jahrb. Min.*, 1916, vol. 2, pp. 165–176. (G. Steinmann, *Geologische Rundschau*, 1917, vol. 8, pp. 279–280, with portrait and bibliography.)

LANG (Victor *Edler von*) [1838–1921] was born on March 2, 1838, at Wiener Neustadt in Lower Austria, and died at Vienna on July 3, 1921. For over forty years (1865–1908) he was Professor of Physics in the University of Vienna. He graduated Ph.D. at Giessen in 1858 and became a Privat-Dozent in physical crystallography at Vienna, devoting much time to original work. His first papers, on the crystallography of quartz, were published as early as 1856 and 1857. With W. J. Grailich a series of systematic descriptions were given of

the crystallography of a number of compounds, and in 1859 he produced a well-illustrated monograph on anglesite. In 1862 at the invitation of N. Story-Maskelyne (who thereby benefited himself by becoming acquainted with the continental methods of research) Lang became an Assistant in the Mineral Department of the British Museum, remaining on the staff until 1864. Evidence of his work in the collection is still shown by the face-indices neatly painted on some of the crystals. During this period in collaboration with Story-Maskelyne a series of mineralogical notes was published in the 'Philosophical Magazine'. In his 'Lehrbuch der Krystallographie' (1866) ideas of symmetry in relation to the different crystal-classes were first developed. He also wrote a text-book on theoretical physics (1867 and 1891) and issued a second edition of A. Beer's 'Höhere Optik' (1882). In later years, up to as late as 1916, he gave crystallographic descriptions of numerous organic compounds. Most of his many papers appeared in the publications of the Vienna Academy of Sciences, of which he was an Ordinary Member since 1867, and later its General Secretary (1899-1911) and President (1915-19). He was also President (1902-21) of the Austrian Commission for Weights and Measures, a Member (1905-19) of the House of Peers, and Privy Councillor. Being a Corresponding Member of the Crystallogological Society, he became, in 1883, an Honorary Member of the Mineralogical Society. The mineral langite bears his name.



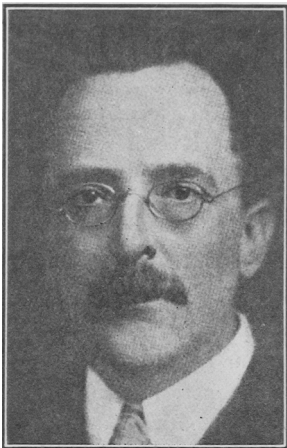
V. VON LANG (in 1909).

LOEHR (August Ritter von) [1847-1917], a private collector, was born at Venice on May 5, 1847, and died at Vienna on November 21, 1917. By profession a railway engineer and manager, he had also wide interests in science and art (photography and numismatology). He was specially interested in gem-stones, and on this subject he contributed several short notes to the Vienna Mineralogical Society (of which he was one of the founders and in 1903-5 President); the first, in 1902, descriptive of an ingenious apparatus for determining specific gravity by immersing the stones in mercury. A brief account of his

extensive collection of gem-stones (now in the Natural History Museum at Vienna) was given in the 'Mineralogisches Taschenbuch' (1911) of the Vienna Mineralogical Society, to which publication he was also an active contributor.

MALLET (Frederic Richard) [1841-1921], was born in Dublin, and at an early age, in 1859, joined the Geological Survey of India, of which he later became a Superintendent. Here he had charge of the chemical laboratory, and from 1866 wrote several papers on Indian minerals. He wrote a Catalogue of the Collection of Minerals in the Survey Museum (1883), and the volume on Mineralogy for the Manual of the Geology of India (1887). After his retirement in 1889 he continued to work on Indian minerals in his private laboratory at home, describing in the pages of this Magazine nemalite, bloedite, and langbeinite. He was elected a member of this Society in 1881, of the Geological Society in 1868, and of the Chemical Society in 1885. He died at Ealing, London, on June 24, 1921.

MOSES (Alfred Joseph) [1859-1920], was born at Brooklyn, New York, on July 25, 1859, and died of cerebral haemorrhage on February 27, 1920. He passed the whole of his career as student, assistant, and



A. J. MOSES.

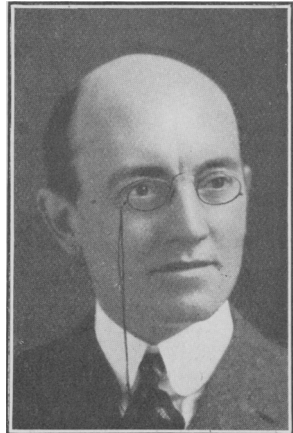
professor at the School of Mines of Columbia University, New York, where in 1897 he succeeded T. Egleston as Professor of Mineralogy. He devoted much of his energy to teaching, and for many years edited the 'School of Mines Quarterly'. To this journal he contributed many papers on mineralogy and crystallography, some original and others intended for the instruction of students. His well-known text-book (with C. L. Parsons) 'Elements of Mineralogy, Crystallography and Blow-pipe Analysis', first published in 1895, passed through five editions; and his excellent 'Characters of Crystals' (geometrical, optical, and physical), which first appeared in parts in the

'School of Mines Quarterly', was issued in book form in 1899. He described the mercury minerals eglestonite, terlinguaite, and mon-

troydite from Terlingua, Texas; and another mercury mineral from this locality was later called moselite. (L. McI. Luquer, *Amer. Min.*, 1920, vol. 5, pp. 109-112, with bibliography; G. F. Kunz, *Mining and Metallurgy*, June 1920, 4 pp. with portrait.)

ORLOV (Nikolai Arsenevich), Орловъ Николай Арсеньевичъ [— 1919], was since 1910 a medical officer at the hydropathic establishment at Pyatigorsk in the northern Caucasus, where he died of typhus on January 27, 1919. He had studied medicine and chemistry at the University of Kazan, and since 1901 published several papers on mineral waters. His papers on the minerals of the Pyatigorsk district date from 1911. One of the minerals described and analysed is a curious, black, massive variety of datolite. With P. N. Chirvinsky he also published analyses of zeolites from Kara-Dag in the Crimea. (P. N. Chirvinsky, *Bull. North Caucasian Meliorations, Novocherkassk*, 1919.)

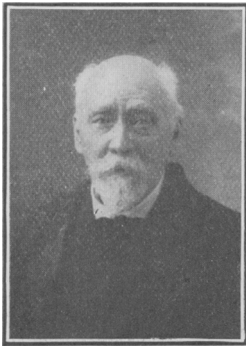
PIRSSON (Louis Valentine) [1860-1919] was born in New York on November 3, 1860, and was of English descent; he died on December 8, 1919. In 1879 he entered the Sheffield Scientific School, Yale University, where he later became teacher of analytical chemistry. His attention was first turned to geology when in the summer of 1889 he acted as field assistant under J. P. Iddings on the U. S. Geological Survey in the Yellowstone National Park; and during the following summer he worked with Iddings in Montana. He then spent a year and a half studying petrography at Heidelberg under H. Rosenbusch and at Paris, returning to Yale in 1892 as instructor in mineralogy and lithology under S. L. Penfield. The following year he took over the geology course, and since 1897 he was professor of physical geology at Yale. During the years 1890-4 he wrote several mineralogical papers giving crystallographical and chemical details. His petrographical work related mainly to the igneous rocks of Montana and New Hampshire; and he took a prominent part in



L. V. PIRSSON.

founding the Cross-Iddings-Pirsson-Washington quantitative classification of igneous rocks, being chosen as 'moderator' of the numerous conferences. His useful text-book 'Rocks and rock minerals' was issued in 1908, and his 'Physical Geology' in 1915; a second edition of the latter, prepared shortly before his death, was issued in 1920. The mineral pirssonite was named after him in 1896. (Biographical notice, with portrait, by Whitman Cross, *Amer. Journ. Sci.*, 1920, ser. 4, vol. 50, pp. 173-187.)

PISANI (Félix) [1831-1920], French chemist, mineral dealer, and author, was born on April 28, 1831, at Constantinople, where his father, of Venetian origin, was in the Russian diplomatic service. His mother was daughter of Félix de Serres, Professor of Chemistry at Clermont-Ferrand; and Pisani sometimes used the name Félix Pisani de Serres. In 1854 he entered C. F. Gerhardt's private school of chemistry in Paris, which, when Gerhardt was appointed to Strasbourg in 1855, passed into the hands of Emil Kopp, and later to Pisani himself. The laboratory was afterwards



F. PISANI (in 1918).

removed to the Rue de Furstenberg, where in addition to private teaching and consulting analytical work, Pisani carried on the business of a dealer in minerals and geological specimens. (He commenced to supply mineral specimens for the British Museum collection in 1869.) His laboratory was a common meeting-place for Parisian mineralogists before the foundation of the French Mineralogical Society in 1878. Of this society Pisani was one of the founders, and (since 1916) one of the few honorary members. A large number of chemical analyses made by Pisani appeared in the

works of other authors, for example, A. Des Cloizeaux in 1870; and the difficult analyses of rare-earth minerals from Madagascar and the detailed analyses of rocks published in recent years by A. Lacroix are attributed to Pisani up to as late as 1918. It seems incredible that work of this kind could be done by a man approaching the age of ninety. His own papers date from 1854 to 1915, the first on derivatives of picric acid and the last on phosphorescent calcite [*Min.*

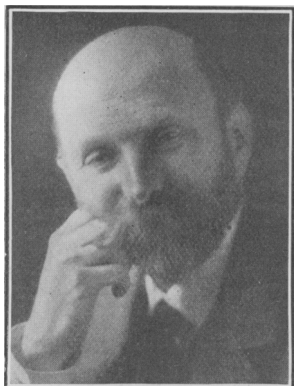
Abstr., vol. 1, p. 247]. The Royal Society Catalogue of Scientific Papers attributes to him sixty-nine titles up to 1883. Most of these deal with the chemical composition of various minerals and also of meteorites. He also published an excellent 'Traité élémentaire de minéralogie' (1875; 2nd edit., 1883), and two books on analytical chemistry. Minerals described by him as new are devilline, dewalquite, kalicine, and kongsbergite. Pisanite was named after him by A. Kenngott in 1860. He died at his home in the Rue de Furstenberg on November 7, 1920. (Bull. Soc. Chim. Paris, 1920, vol. 27, p. 892.)

REYNOLDS (James Emerson) [1844-1920], for many years (1875-1903) Professor of Chemistry in the University of Dublin, was born at Booterstown, Co. Dublin, on January 8, 1844, and died in London on February 17, 1920. He was trained in medicine and for a short time he practised in Dublin. In 1867 he was appointed 'Keeper of Minerals' to the Royal Dublin Society (a post early held by C. L. Giesecke and later by R. H. Scott), and as a guide to this collection (now part of the National Museum of Ireland) he published in 1872 his 'Mineralogical Tables'. During that period he published several mineralogical papers. He made a special study of organic and other compounds of silicon, comparing them with mineral silicates; and as one interesting result he synthesized anorthite by an entirely new method. (T. E. Thorpe, Journ. Chem. Soc. London, 1920, vol. 117, pp. 1633-1637, with portrait; Proc. Roy. Soc., 1920, ser. A, vol. 97, pp. iii-vi.)

RYBA (František = Franz) [1867-1918], Professor of Mineralogy, Geology, and Ore-deposits in the Mining School at Prziбрам in Bohemia, was born at Chotěboř in Bohemia on July 2, 1867, and died on May 18, 1918. His work was mostly on palaeobotany, but he also wrote on the chromite deposits of Kraubat and other mineral deposits in Czechoslovakia. (R. Kettner, Verh. Geol. Reichsanst. Wien, 1918, pp. 128-130.)

SELIGMANN (Gustav) [1849-1920] of Coblenz was a banker by profession and was well known as a private collector of minerals. He was born at Coblenz on May 31, 1849, and died there on June 28, 1920. He aimed at collecting well-crystallized material suitable for scientific investigation, and this material was freely lent to various workers.

Many specimens of his rich series from the Binn valley in Switzerland



G. SELIGMANN (in 1920).

are figured in L. Desbuissons's book on this locality. He studied at Berlin in 1868-9, and was a pupil of G. Rose and G. vom Rath. During the years 1876-87 he wrote a dozen crystallographic papers on various minerals. The honorary degree of Ph.D. was conferred on him in 1911 by the University of Bonn. He joined this Society in 1884, and was Treasurer of the German Mineralogical Society since its commencement in 1908. (R. Brauns, *Centralblatt Min.*, 1920, 366-368; V. Goldschmidt, *Beitr. Kryst. Min.*, 1921, vol. 2, 4 pp., with portrait and bibliography.)

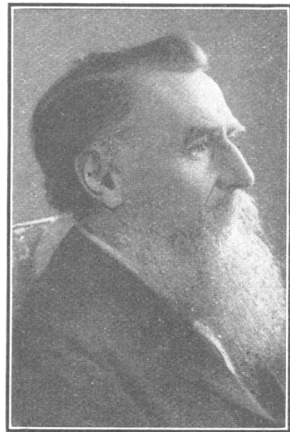
TRONQUOY (René) [1884-1915], since 1909 Secretary of the French Mineralogical Society, was assistant to Prof. F. Wallerant in the mineralogical laboratory at the Sorbonne (University of Paris), and he also assisted Prof. A. Lacroix in the colonial laboratory at the Museum of Natural History. His principal work was 'Contribution à l'étude des gîtes d'étain' (*Bull. Soc. franç. Min.*, 1912, vol. 35, pp. 238-468, 6 pls.), for which he was awarded the Joseph Labbé prize by the Academy of Sciences in 1915. He served as a lieutenant in the 67th Regiment of Infantry and was reported as missing on February 20, 1915. It was long hoped that he had been taken prisoner, and for this reason the numbers of the Bulletin of the French Mineralogical Society bore his name as editor up to the end of 1918. (A. Lacroix, 'René Tronquoy (1884-1915).' *Bull. Soc. franç. Min.*, 1919, vol. 42, pp. 1-4.)

TWELVETREES (William Harper) [1848-1919]. Government Geologist of Tasmania, was born at Dunstan in Bedfordshire, and died on November 7, 1919, at Launceston in Tasmania. He was educated in London and Hamburg. After spending ten years at copper mines in Russia, and ten years at silver-lead mines in Asia Minor, he went to Australia in 1891. In 1899 he was appointed Government Geologist of Tasmania, and he did much to raise the scientific status of his

department in opposition to demands for more immediate results bearing on commercial mining interests. Although most of his writings took the form of reports on the geology of mining districts, he also devoted some time to pure mineralogy. Some of this work was done with W. F. Petterd (1849–1910), after whom he named *petterdite*. In 1880–1882 before the Geological Society of London he described fossil reptiles from Perm. (Rep. Secr. Mines, Tasmania, for 1919, 1920, pp. 38, 61, with portrait.)

UHLIG (Johannes) [1883–1918], Assistant in the Mineralogical Institute of the University of Bonn, was born at Mittweida in Saxony on May 20, 1883, and died of pneumonia following influenza at Kiev on December 3, 1918. During the war he served in a field hospital and later as geologist. He was a promising worker and had already published several mineralogical papers with careful chemical analyses. One of these is descriptive of nephrite from the Harz, which he had found in situ. (R. Brauns, 'Johannes Uhlig †.' *Centralblatt Min.*, 1919, pp. 63–64, with bibliography.)

VOIGT (Woldemar) [1850–1919], since 1883 Professor of Theoretical Physics, and twice Rector, in the University of Göttingen, was born at Leipzig on September 2, 1850, and died at Göttingen on December 13, 1919. His university studies were interrupted by the Franco-German war, and were completed in 1874 at Königsberg in Prussia. Here he came under the influence of F. E. Neumann [1798–1895], then Professor of Mineralogy and Physics, and in consequence his work followed on very much the same lines as that of Neumann. His first paper in 1875 was on the elasticity constants of rock-salt, and he later determined these constants for many other minerals and artificial crystals. Other work related to optical activity, magneto-optics, and absorption, thermal dilatation and conductivity, piezo- and pyro-electricity. He published in 1898 an elementary text-book on the physics of crystals, and in 1910 a larger



W. VOIGT (in 1912).

work 'Lehrbuch der Kristallphysik' dealing with branches other than optical. He was honorary Ph.D. of Padua and Geneva, LL.D. of Glasgow, Sc.D. of Cambridge, and D.Sc. of Manchester, and was elected a Foreign Member of the Royal Society of London in 1913. (C. Runge, *Physikalische Zeitschrift*, 1920, vol. 21, pp. 81-82, with portrait; *Nachr. Gesell. Wiss. Göttingen*, 1920; H. L[amb], *Proc. Roy. Soc. London*, 1921, ser. A, vol. 99, pp. xxix-xxx.)

WADA (Tsunashirō) [1856-1920] was born at Obama, prov. Wakasa, Japan, on March 15, 1856, and died at Tokyo on December 20, 1920. He did much to promote the development of the mining industry in Japan. After studying at the University of Tokyo, he entered, in 1878, the service of the Home Department, and became Director of the Geological Survey in 1880 and of the Mining Bureau in 1889, retiring from these posts in 1893.



T. WADA.

From 1885 to 1891 he was also Professor of Mineralogy and Lithology in the University of Tokyo, and afterwards Professor of Mining Law. Later, he was President of the Japanese Steel Works and of the Institute of Mining Engineers, and Adviser in Mining to the Korean Government. In 1917 he was nominated by the Emperor as a member of the House of Peers. At the age of twenty he produced a work on Mineralogy, in 1877 one on Crystallography, whilst others dealt with the Mining Industry in Japan. His well-known book 'Minerals of Japan'

(Japanese and English editions in 1904) was based on his extensive private collection, and a second edition was prepared by his pupils in celebration of his sixtieth birthday in 1916. As a supplement to this work he also issued 'Beiträge zur Mineralogie von Japan', nos. 1-5, 1905-1915. (M. Otagawa, *Trans. Inst. Mining Metall. Japan*, 1921; *Journ. Geogr. Soc. Tokyo*, 1921, vol. 32, no. 385, with portrait; G. F. Kunz, *Amer. Min.*, 1921, vol. 6, pp. 109-113.)

YOUNG (Alfred Prentice) [1841-1919] was born at Bombay on December 13, 1841, and died in London on December 8, 1919. He was educated at the Denmark Hill Grammar School in London, and in

1858 entered the service of the East India Company as midshipman, becoming later a mate in the Indian Navy. When the latter was abolished in 1864 he was transferred to the Revenue Survey of Bombay as Assistant Superintendent. During periods of official leave in 1876-1877 and 1882-1883 he studied at Harvard University and at the Royal School of Mines in London. Retiring in 1893, he entered the University of Berlin as a student, and in 1902 took the degree of Ph.D. with a dissertation on the petrography of rocks, collected by J. W. Reiss and M. A. Stuebel, from Cotopaxi and the neighbouring volcanoes of Ecuador. Living in London, but alone and without any fixed address, he joined this Society in 1902, and was always a prominent and interested member in the discussions. Annual pilgrimages were made to the Tyrol, and he was held up there at the outbreak of war in 1914. He wrote various papers on the geology of this district, one of them on a serpentine-rock in vol. 14 of this Magazine.

ZYNDEL (Fortunat) [1882-1917] was born at Maienfeld, Grisons, on July 21, 1882, and was drowned on February 25, 1917, when the steamship *Laconia* was torpedoed off the coast of Ireland. Whilst working as a schoolmaster he also studied at the University of Bâle, graduating in 1912 with a thesis on twinned crystals of quartz. He wrote several important papers on this subject and also on Swiss geology. In 1913 he went to Trinidad as oil geologist for an English company, returning in 1914 for military service in Switzerland. He met his early death when returning from a third trip to Trinidad. (Aug. Boxtorf, 'Dr. Fortunat ZynDEL, 1882-1917.' Verh. Schweiz. Naturf. Gesell., 1917, Jahr. 99 in Zürich, Nehr. pp.86-96, with portrait and bibliography; C. Schmidt, Verh. Naturf. Gesell. Basel, 1918, vol. 29, pp. 110-14.)

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